The Landmark, Abu Dhabi, UAE

Wind Engineering Study

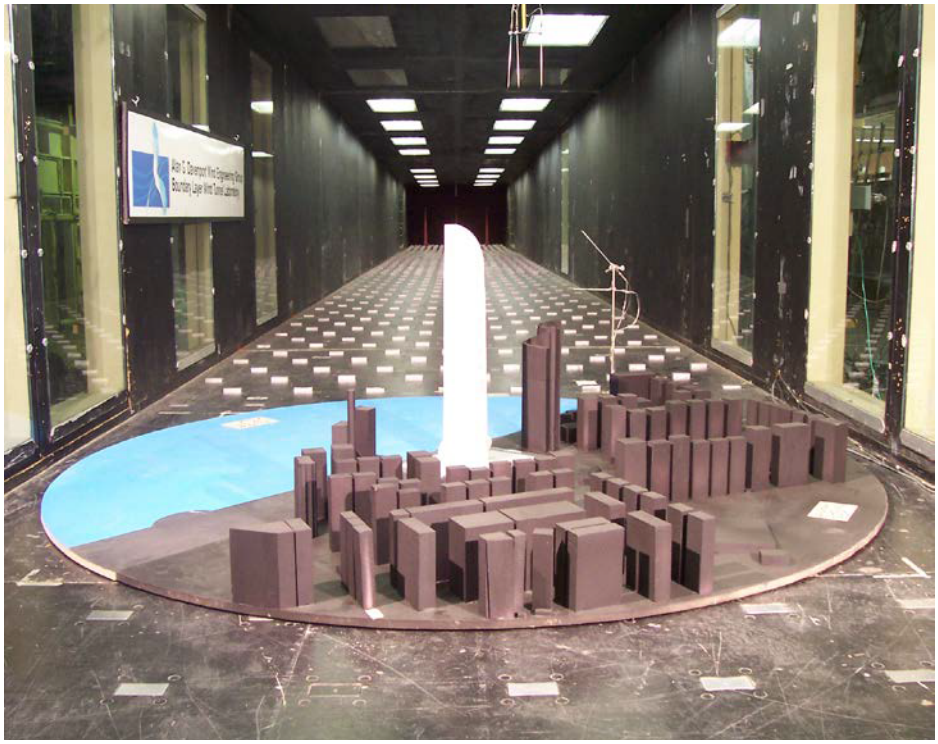

Photo Credit: Pelli Clarke Pelli

Client	*Structural Engineer*	*Architect*
Pelli Clarke Pelli	Buro Happold Consultants	Pelli Clarke Pelli
	Year Tested	*Model Scale*
	2006	1:400

The Project

The project site is located on the shoreline of the Persian Gulf in Abu Dhabi, UAE. The project consists of a mixed office-residential tower.

The tower is elliptical in plan area and tapers inward from ground level to roof level. The façade of the tower is enclosed by two layers of architectural screening, designed to provide privacy and shading from direct sunlight.

A sky garden is located near the top of the building and is open to the weather and is surrounded by a cantilevered wall which varies in height. A 3-storey retail structure with terraces is appended to the base of the tower. This low-rise structure is covered by two large wing-like canopies.

The Wind Tunnel Studies

The wind engineering studies for the Landmark project included a study of the overall structural loads and responses on the building and canopies, the local external and differential pressure loads and a pedestrian wind environment study.

The study of overall structural loads and responses made use of the force-balance technique. Loads on the base canopies were determined using the pressure-integration technique.

Local cladding pressures were measured at 725 locations over the tower, low-rise building and canopies. Pedestrian-level wind measurements were made at 30 locations around the base of the building.

The Boundary Layer Wind Tunnel Laboratory

Western

The Boundary Layer Wind Tunnel Laboratory
The University of Western Ontario
Faculty of Engineering, London, Ontario
Canada, N6A 5B9 Tel: (519) 661-3338 Fax: (519) 661-3339
Internet: www.blwtl.uwo.ca E-mail: info@blwtl.uwo.ca

FSTB/ 231 /September 2006 / MJM
Last Printed: March 24, 2009